Report Documentation Page

Form Approved
OMB No. 0704-0188

1. REPORT DATE	2. REPORT TYPE	3. DATES COVERED
30 SEP 2009	**Annual**	**00-00-2009 to 00-00-2009**

4. TITLE AND SUBTITLE	5a. CONTRACT NUMBER
Observing The Evolution Of Typhoon Wakes	5b. GRANT NUMBER
	5c. PROGRAM ELEMENT NUMBER
6. AUTHOR(S)	5d. PROJECT NUMBER
	5e. TASK NUMBER
	5f. WORK UNIT NUMBER
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) **Woods Hole Oceanographic Institution,MS 29, Clark 209A,Woods Hole,MA,02543**	8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)	10. SPONSOR/MONITOR'S ACRONYM(S)
	11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release; distribution unlimited

13. SUPPLEMENTARY NOTES
code 1 only

14. ABSTRACT
The long-term goal of this work is to observe, understand, quantify and parameterize upper-ocean mixing for use in global ocean modeling.

15. SUBJECT TERMS

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			
unclassified	**unclassified**	**unclassified**	**Same as Report (SAR)**	**2**	

Observing the Evolution of Typhoon Wakes

Steven R. Jayne
Woods Hole Oceanographic Institution
MS 29, Clark 209A
Woods Hole, MA 02543-1541
phone: (508) 289-3520 fax: (508) 457-2163 email: sjayne@whoi.edu

Award Number: N000140810614
http://www.whoi.edu/hpb/Site.do?id=3852

LONG-TERM GOALS

The long-term goal of this work is to observe, understand, quantify and parameterize upper-ocean mixing for use in global ocean modeling.

OBJECTIVES

Our research program is to observe the temporal and spatial evolution of typhoon wakes, in particular we plan to directly observe the mixing associated with turbulence generated by the strong air-sea interaction in a typhoon. These observations will be used to make quantifiable assessments of mixed layer models under the extreme conditions of a typhoon.

APPROACH

We will make these observations by equipping Seagliders and Webb Gliders with microstructure sensors and then deploying them prior to the passage of a typhoon in the Western Pacific Ocean and in its wake. Also, a ship-based survey of the evolution of the typhoon wake will be undertaken to observe the restratification and collapse of the cold wake.

WORK COMPLETED

The planning of the observational field program has been the focus of the work completed thus far, with several meetings of the ITOP and Typhoons DRI investigators haven taken place, and another coming in November, 2009 in Taiwan. The integration and testing of microstructure sensors on the gliders is ongoing. In collaboration with Louis St. Laurent, a Webb glider has been outfitted with Rockland Scientific microstructure probes, and a successful test was performed in Ashumet Pond in Falmouth, MA this past spring. Integration of similar microstructure sensors in underway at APL/UW in collaboration with Luc Rainville and Craig Lee.

RESULTS

As we are still in the planning stages for the field program that will occur next summer, beyond the on-going integration and testing of the microstructure sensors onto the gliders, we have no scientific results to report.

IMPACT/APPLICATIONS

The technical problem of integrating and testing microstructure sensors on gliders is well underway, and this field program offers an excellent opportunity for using these technical developments to study an important scientific problem while providing a new measurement capability to the oceanographic community.

RELATED PROJECTS

Related to this project is my work in understanding and parameterizing mixing in global ocean models, such as the Community Climate System Model (http://www.ccsm.ucar.edu/), and a newly proposed Climate Process Team on the same subject.